

## BIOGRAPHICAL SKETCH

NAME: Kevin Dreher

### EDUCATION/TRAINING:

Institution	Degree	Year	Field of Study
Villanova University	B.S.	1974	Chemistry
Pennsylvania State University	M.S.	1977	Biochemistry
Pennsylvania State University	Ph.D.	1980	Biochemistry
NIAID, NIH	Postdoc.	1979	Immunogenetics

### PROFESSIONAL EXPERIENCE:

- 1991-Present Research Chemist, NHEERL, U.S. EPA, Research Triangle Park, NC.
- 1998-Present Adjunct Professor, North Carolina State University, Raleigh, NC.
- 1993-1998 Adjunct Associate Professor, North Carolina State University, Raleigh, NC.
- 1987-1991 Staff Scientist, Weis Center for Research, Geisinger Clinic, Danville, PA.
- 1983-1987 Assistant Professor, Department of Biochemistry, School of Medicine, West Virginia University

### PROFESSIONAL SOCIETIES:

- American Society for Biochemistry and Molecular Biology
- American Heart Association
- Society of Toxicology

### SELECTED AWARDS AND HONORS:

- US EPA Gold (PM Health Effects) and Bronze (Orimulsion Health Risk Assessment) Medal Awards, 2003.
- EPA, Level III, Scientific and Technological Achievement Award, 2001.
- EPA Level II, Scientific and Technological Achievement Award, 1996.

### INVITED LECTURES/SYMPOSIA (last 3 years):

- May 2006 - "Identification of Emerging Subpopulations Susceptible to Adverse Health Effects Associated with Particulate Air Pollution Exposure", US EPA Science Forum, Washington, DC.
- Mar. 2006 - "Integrating Laser Capture Microdissection and Micro-Omics Based Analyses for *In Situ* Molecular Toxicology", Society of Toxicology National meeting, San Diego, CA.
- Feb. 2006 - "Challenges Associated with the Health Risk Assessment of Nanomaterials: More Than Just Size", American Association for the Advancement of Science (AAAS) National meeting, St. Louis, MO
- Dec. 2005 - "Pulmonary and Cardiovascular Effects of Air Pollution and Emerging Technologies: Glimpse Into The Future", National Institute for Occupational Health and Safety, Health Effects Laboratory Division (NIOSH), Morgantown, WV
- Oct. 2005 - "Cardiovascular Effects of Particulate Air Pollution: Identification of Emission Sources and Mechanisms of Action, West Virginia University, Morgantown, WV.
- Sept., 2004 - "Particulate Air Pollution Cardiovascular Toxicology: Hazard Identification and Mechanisms of Action", British Association for Lung Research, University of Leicester, Leicester, UK.
- Mar. 2004 - "Effect of Oil Combustion Particle Bioavailable Constituents on Ex Vivo Vascular Function of Aortae Recovered from Healthy and Early Type 2 Diabetes". 2004 Society of Toxicology Meeting, Baltimore, MD.

### ASSISTANCE/LEADERSHIP PROVIDED TO THE SCIENTIFIC COMMUNITY (last 3 years):

- 2006, Invited participant, Working Conference on Engineered Nanomaterials and Human Health Woodrow Wilson International Center for Scholars, Washington, DC.
- 2005 – present, Member, Nanoscale Environmental Science and Technology Research Program, Materials and Process Center, California Institute of Technology, Pasadena, CA.
- 2005 - present, Member, Nanotechnology Environmental and Health Implications (NEHI) Working Group, Nanoscale Science, Engineering, and Technology Committee (NSET), National Nanotechnology Initiative (NNI), Executive Office, Washington, DC.

- 2004-present, Member of Nanomaterial Safety and Toxicology Team, HESI, Washington, D.C.
- 2003-present, Member, Science Advisory Board, Center for Biological and Environmental Nanotechnology, Rice University, Houston, TX
- 2002-2005, Member, Scientific Advisory Board, Undergraduate Summer Internship Program in Biological Sciences, Howard Hughes Medical Institute Grant, North Carolina State University.
- 2001-2003, Councilor, Inhalation Specialty Section, National Society of Toxicology
- 2001-2004, Member, Scientific Advisory Committee, Center for PM Research, Harvard School of Public Health, Boston, MA.

**ASSISTANCE/LEADERSHIP PROVIDED TO THE AGENCY (last 3 years):**

- 2006, Coordinator, NHEERL Nanotechnology Health Implications Research.
- 2005, US EPA, ORD, NHEERL Co-Authorship Guidelines Committee.
- 2004 – 2005, Member, US EPA Science Policy Council, Co-Author, Agency's Nanotechnology White Paper.

**PUBLICATIONS (2000- 2006):**

- W. P. Watkinson, M. J. Campen, K. L. Dreher, W-Y Su, U. P. Kodavanti, J. W. Highfill and D. L. Costa. "Thermoregulatory Effects Following Exposure to Particulate Matter in Healthy and Cardiopulmonary-Compromised Rats". *Jour. Of Thermal Biology* 25:1331-137, 2000.
- W-Y. Su, R.H. Jaskot and K.L. Dreher. "Particulate Matter Induction of Pulmonary Gelatinase A, Gelatinase B, and Tissue Inhibitor of Metalloproteinase Expression". *Inhalation Toxicology* 12 (Suppl. 2):105-119, 2000.
- R. Sibajoris, A. J. Ghio, R. Jaskot, K.L. Dreher, and J. M. Samet. "In Vivo and In Vitro Correlation of Pulmonary MAP Kinase Activation Following Metallic Exposure". *Inhalation Toxicology* 12:453-468, 2000.
- N. Jiang, K.L. Dreher, J.A. Dye, Y. Li, J.H. Richards, L. D. Martin and K.B. Adler. "Residual Oil Fly Ash Induces Cytotoxicity and Mucin Secretion by Guinea Pig Tracheal Epithelial Cells via Oxidant-Mediated Mechanism". *Toxicol. Appl. Pharmacol.* 163:221-230, 2000.
- WY. Su, R. H. Jaskot, J. Richards, A. R. Abramson, F. W. Woessner, WH. Yu and K. L. Dreher. "Pulmonary Matrilysin Gene Induction and Protein Activation Following Emission and Ambient Air Particulate Matter Exposure". *Am. Jour. Physiol. (Lung Cell. and Mol. Physiol.)* 279:L152-L160, 2000.
- K. Dreher. "Particulate Matter Physicochemistry and Toxicology: In Search of Causality - A Critical Perspective". *Inhalation Toxicology* 12 (Suppl. 3):45-57, 2000.
- K. Dreher and D. Costa. "Systemic Health Effects of Ambient Air Particulate Matter Exposure", *Jour. Toxicol. Environ. Hlth.* 65 (20):1491-1492, 2002.
- E. Roberts., R. Jaskot, J. Richards, J. Joyner, and K. Dreher. "Role of Oxidative Stress in Acute Lung Injury and Associated Molecular Pathology Following Air Pollution Particle Exposure", *Inhalation Toxicology*, 15(#3):1327-1346, 2003.
- E. Roberts, L. Charboneau, G. Espina, L. Liotta, E. Petricoin, and K. Dreher, "Molecular Analysis of Airway Injury Following Air Pollution Particle Exposure Using Laser Capture Microdissection and Protein Array Technologies", *Jour. Toxicol. Environ. Hlth.*, Part A, 67:851-861, 2004.
- K.L. Dreher. Health and Environmental Impact of Nanotechnology: Toxicological Assessment of Nanoparticles. *Toxicological Sciences* 77:3-5, 2004.
- D.L. Costa, J.R. Lehmann, D.W. Winsett, J. Richards, A.D. Ledbetter, and K.L. Dreher, "Comparative Pulmonary Toxicological Assessment of Oil Combustion Particles Following Inhalation or Instillation Exposure", *Toxicological Sciences*, accepted, 2006.
- S.D. Proctor, K.L. Dreher, S.E. Kelly, and J.C. Russell, "Hypersensitivity to Fine Airborne Particulate Pollution-Induced Direct and Noradrenergic-Mediated Vascular Contraction in Pre-Diabetic JCR:LA-cp Rats", *Toxicological Sciences*, accepted, 2006.
- E.S. Roberts, S.E. Malstrom, and K.L. Dreher, *In Situ* Pulmonary Localization of Air Pollution Particle-Induced Oxidative Stress, *Jour. Toxicol. Environ. Hlth*, submitted.